

ILLEGIB

Approved For Release 2000/05/10 : CIA-RDP

*Contract
No. 6261/16051-3*

January 23, 1964

ABD-4 Roll Film Dryer

6261-16051-3

25X1A

ILLEGIB

The ABD-4 is an air bearing dryer for use with the existing HTA/2 Film Processor. It replaces the old dessicant dryer which was not moved from the old location.

25X1A

is doing the test work on it and he is doing a thorough job. The machine is tracking well except for tracking over the output vacuum roller. This appeared to be inadequate tension as the film came off the air bearings. experimented with tension rollers just ahead of the Vacuum roller but it did not solve the problem completely. So, he did two other things, and ~~also~~ eliminated the tension rollers. First he ground the vacuum roller ~~fl~~ so that it was perfectly cylindrical to half a thousandth of an inch. Next he improved the flow of air in the plenums so that the air pressure at the bearings increased. Thus he could increase the resistance on the dancing roller so that the film would have increased tension as it was fed to the recalcitrant vacuum roller. There was a 90% improvement in tracking. He is going to try to get further improvement by adding a slight taper to the ends of the vacuum roller. The tapered rollers have been successfully used in their storage and retrieval equipment.

25X1A

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The vacuum rollers do not have teflon coating, they are 316 stainless. At present, has no plans to add teflon coating to the rollers. It is possible that the thin base film could stick to the entering vacuum roller if it were tacky instead of wet when it entered. This problem was encountered on the HTA/5. There should be no problem with the exit vacuum roller since the film will be dry as it passes out of the dry box and over this roller.

25X1A

has put 150 to 200 hours of running time on the machine. His longest continuous run was 8 hours. He has no trouble drying SO278 (now called 8430) at 15 fpm. This is pretty good for a dryer that size. When he gets it tracking to his satisfaction, he will run film, thin base type.

25X1D

25X1D

25X1A

25X1A

*Received
30 Jan.*

Jan

626

ABD-4 Roll Film Dryer

25X1A

This is an air bearing dryer in which the bearings are all supplied from one blower and common plenum. The common plenum is divided into three sections for separate heat control. The bearing principle is similar to the HTA/5 but the air supply is different.

This dryer is for use on the existing HTA/2 and replaces the old desiccant dryer which was not moved from the old location.

25X1A

25X1A

The dryer is complete and in final test. The dryer is doing the testing. [redacted] says the machine is working fine except for tracking over one of the vacuum rollers. The first vacuum metering roller is working OK. It takes the film out of the Processing machine and meters it into the drying chamber. The air bearings are also alright. They are supplied by a 3 HP motor blower which delivers 1700 cfm at a pressure of 6 inches of water. This is adequate flow and pressure for drying.

25X1A

The film then goes onto a polyurethane dancing roller which controls the speed of a second vacuum metering roller. This metering roller supplies the film to the take up spool which is driven by a torque motor. The two metering rollers regulate the film tension in the drying cabinet and prevent any collapsing of the air bearings. The tension on the film in the cabinet is so light that there is a problem of tracking over the second vacuum metering roller. [redacted] thinks he will have to put an idler roller between the dancing roller and the vacuum roller to provide adequate tension for good tracking.

It is expected that the ABD/4 will be the first wide film air bearing dryer in operation. The principles are sound and it should do an efficient job of drying. Some of the details of execution could be improved. I think the 3 separate heat controls are a needless complication and introduce some pressure losses in the inflow ducting.

25X1A

This HTA/2 machine has never been up in [redacted] 25X1A
This dryer must handle 2.5 mil film to be useful. HSN.
An added idler roller should be used on a last pass.

ABD-4 Roll Film Dryer

Ja

62

25X1A

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1-11
The Heico desiccant dryer has never been installed on the HTA/2 process since it was moved to Bldg 7

25X1A

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Only on a first second

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1-17-64
The dryer must be checked carefully for its ability to dry film. If it will be a waste of money